



IBM Software Group

# What's new in CICS TS V5.4

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@business on demand.

# A big thank you to Ian Burnett

- CICS TS for z/OS Performance Lead
- [ian.burnett@uk.ibm.com](mailto:ian.burnett@uk.ibm.com)
- He originally wrote this pitch
- All mistakes belong to Dan Zachary

# Java EE 7 Full Platform

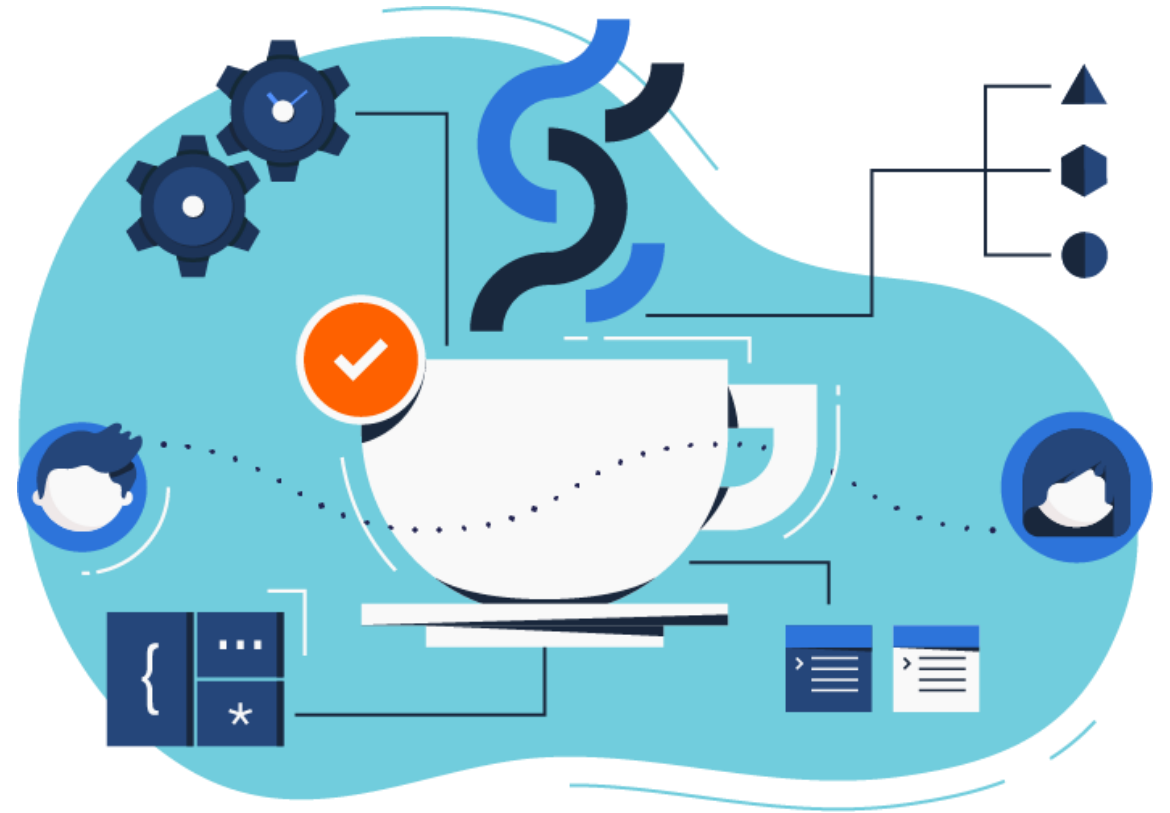
- ✓ **Support for applications written to the Java EE 7 Full Platform specification**
- ✓ CICS asynchronous API
- ✓ CICS policies – system and task rules enhancements
- ✓ Security and resiliency enhancements
- ✓ EXCI support for channels and containers
- ✓ New mechanism for controlling MQ trigger and bridge monitors
- ✓ Enhancements that simplify or automate common workflows

# Support for applications written to the Java EE 7 Full Platform specification

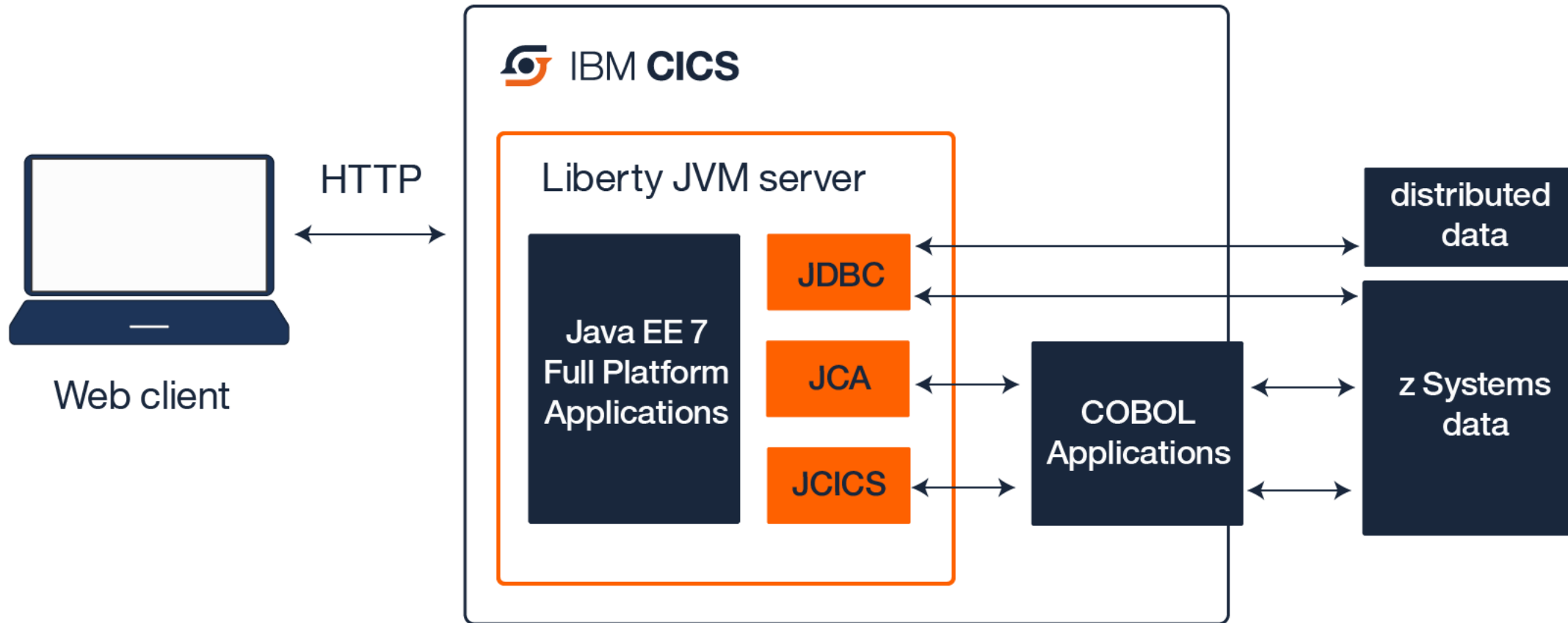
CICS TS now supports Java applications that are written to the Java Enterprise Edition 7 (Java EE 7) Full Platform specification, using the embedded version of IBM WebSphere Application Server Liberty (Liberty).

Java applications that are hosted in CICS TS are integrated with CICS tasks by default. They provide a simple and powerful mechanism of modernizing CICS applications by using Java EE 7 features and capabilities.

Support added to V5.3 by APAR PI77502

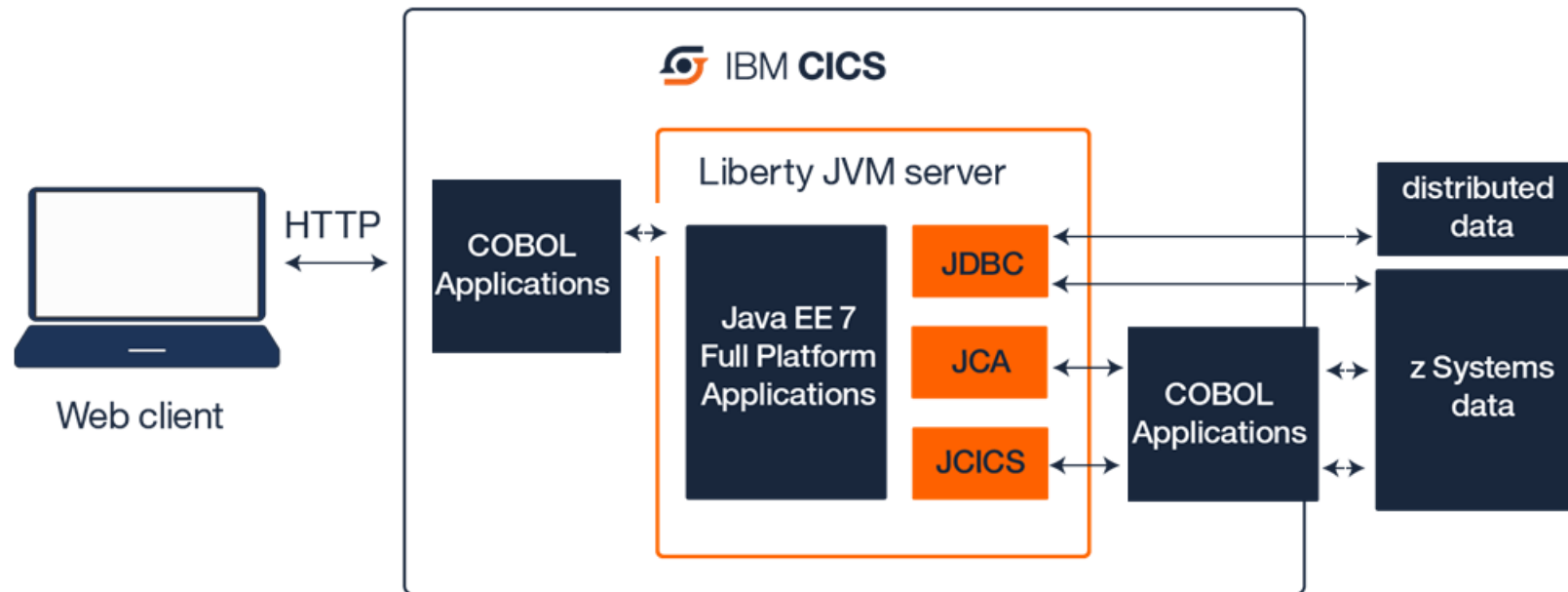


# Support for applications written to the Java EE 7 Full Platform specification ...



# Link to Liberty

- Use EXEC CICS LINK to invoke a java program.
- Support for Link to Liberty added to V5.3 by APAR PI63005



# Link to Liberty

The ability to LINK to a Java EE application from other languages has been added.

Non-Java programs, such as COBOL and PL/I programs, can now pass large volumes of structured parameter data to Java EE applications by using the standard CICS API.

```
PROCEDURE DIVISION.  
MAIN-PROCESSING SECTION.  
* Logic to create Container1 here ...  
    EXEC CICS PUT CONTAINER('Container1')  
        CHANNEL('CCHA')  
        FROMCODEPAGE('IBM037')  
        FROM(WS-DATA)  
        END-EXEC.  
* LINK to program of choice passing channel  
    EXEC CICS LINK PROGRAM('PROGRAMB')  
        CHANNEL('CCHA')  
        END-EXEC.  
* Read response container  
    EXEC CICS GET CONTAINER('Response')  
        CHANNEL('CCHA')  
        INTO(WS-RESPONSE)  
        FLENGTH(WS-RESPONSE-LEN)  
        END-EXEC.  
* Logic to check response container here ...  
RETURNTOCICS.  
    EXEC CICS RETURN END-EXEC.  
EXIT.
```

Just an  
EXEC CICS LINK call

# Link to Liberty

```
public class GetandReturnChannel { Class must only use default zero argument constructor  
    @CICSProgram("PROGRAMB") Annotation configures this method as an entry point  
    public void link() throws CicsException { Method accepts no arguments  
        Task t = Task.getTask();  
        if(t != null) {  
            String containerName = "Container1";  
            Channel channel = t.getCurrentChannel();  
            Container container1 = channel.getContainer(containerName);  
            String data = container.getString();  
            Container response = channel.createContainer("Response");  
            response.putString("OK was sent: " + data);  
        }  
    }  
}
```

Channel and container  
API to transfer data



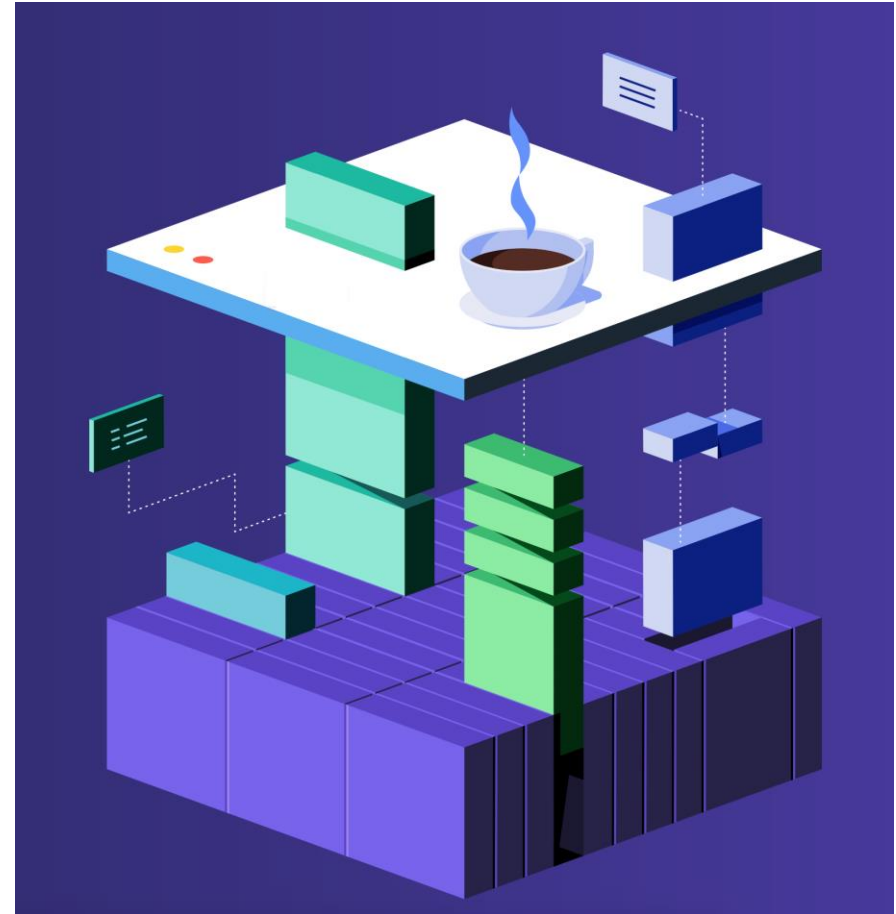
# IBM Record Generator for Java V3.0

Standalone Java utility which generates Java helper classes to describe COBOL or Assembler data structures.

Simplifying the development of Java programs which interact with record orientated data.

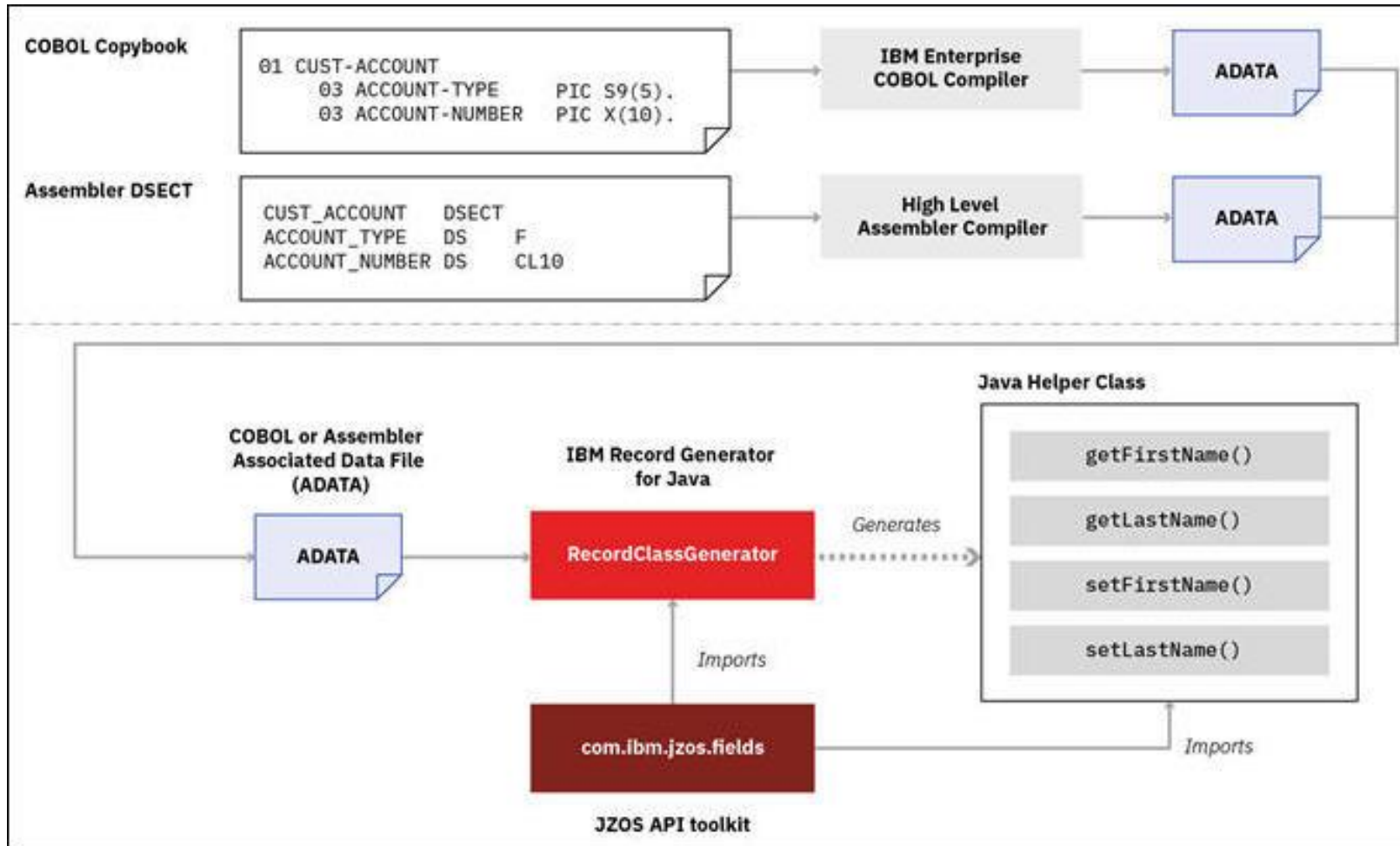
Supersedes JZOS Record Generator V2.4.6

Available 29<sup>th</sup> September 2017



[developer.ibm.com/mainframe/products/record-generator-for-java/](https://developer.ibm.com/mainframe/products/record-generator-for-java/)

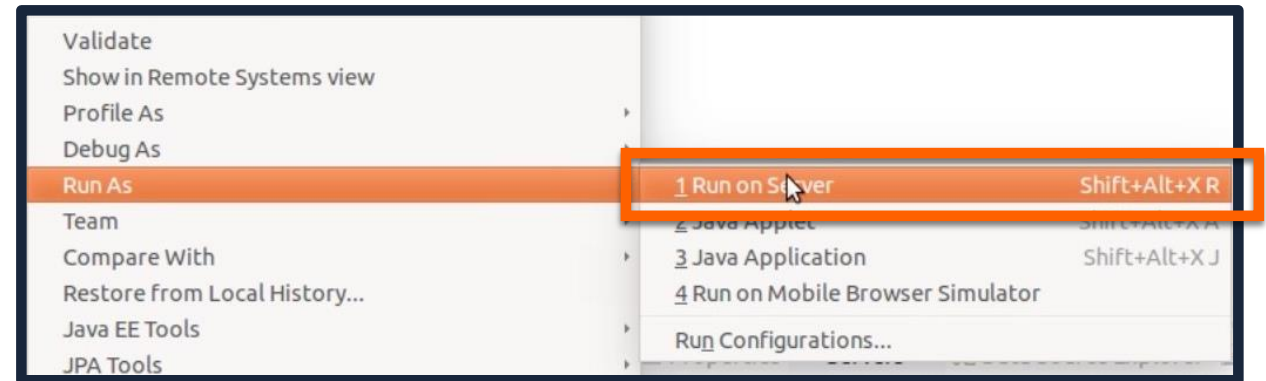
# IBM Record Generator for Java V3.0



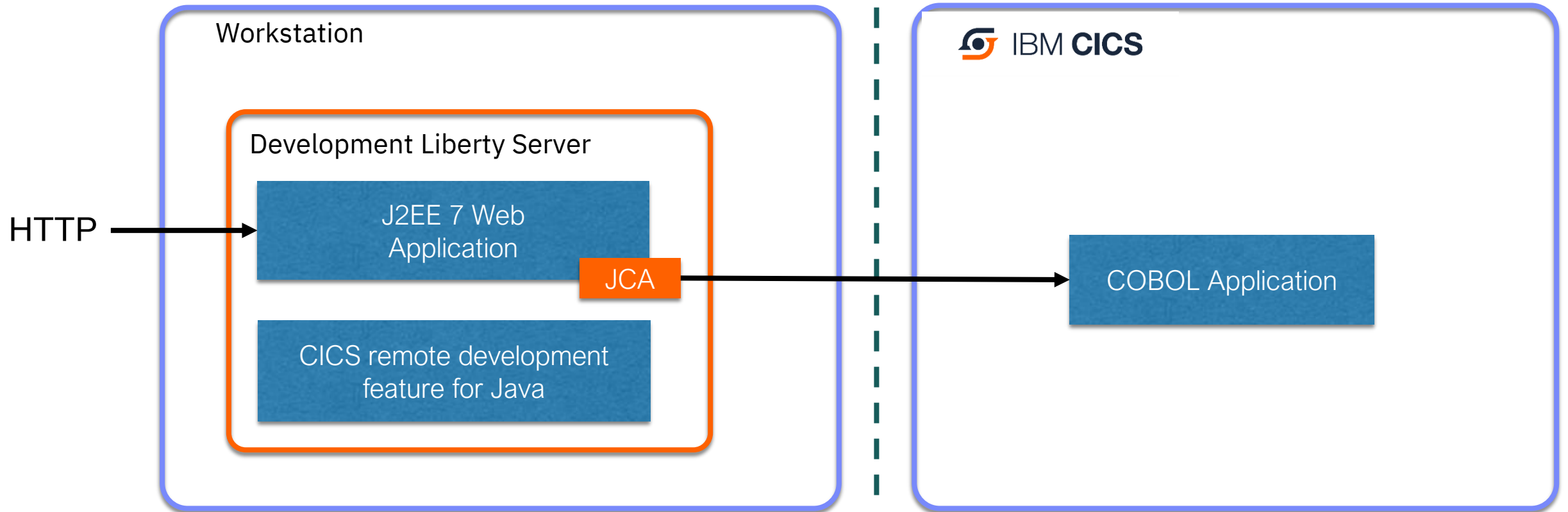
# CICS TS remote development feature for Java

The CICS TS remote development feature for Java enables Java EE developers to develop local applications that call CICS programs on a remote CICS TS.

The JCA interface is used, meaning that the application can then be installed and run in Liberty in CICS without any changes.

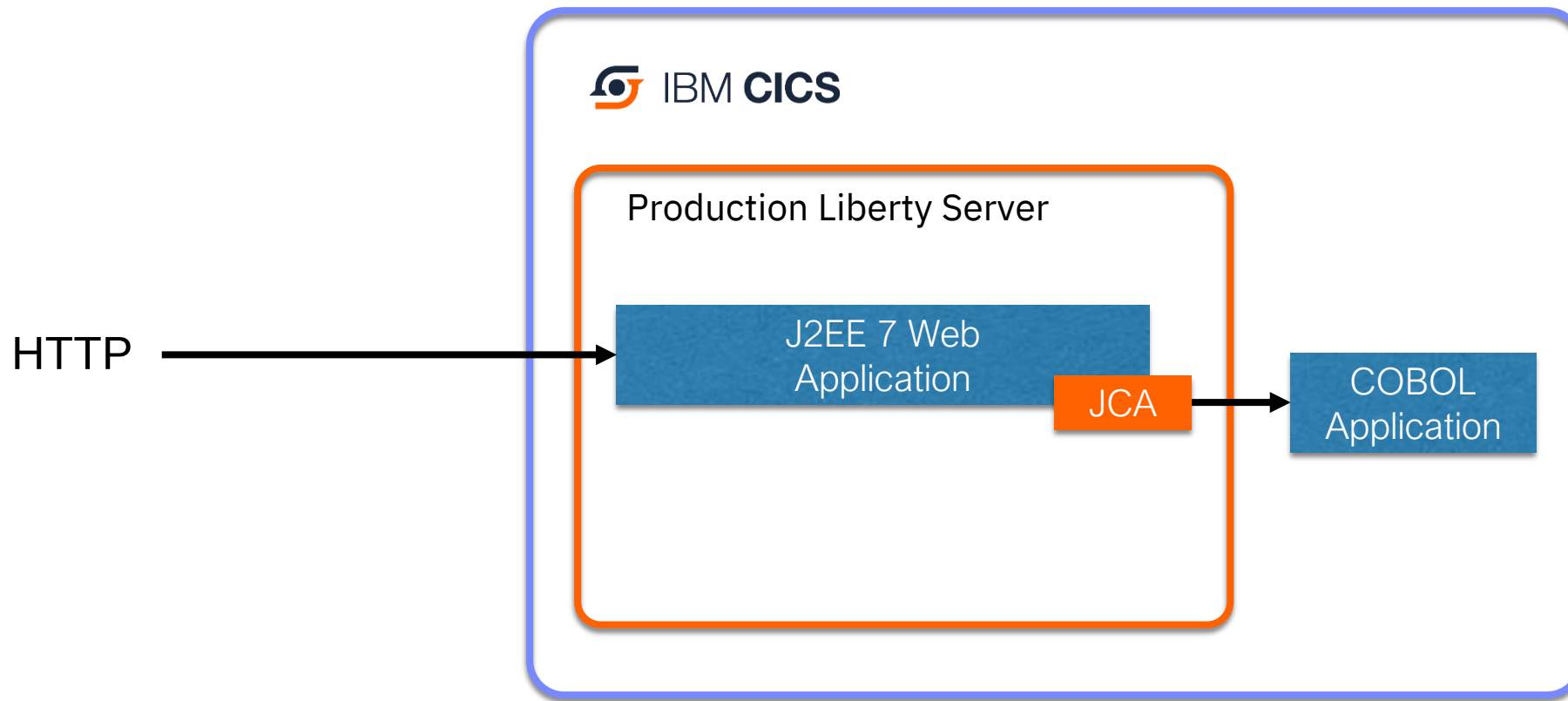


# CICS TS remote development feature for Java



No requirement for CICS TG  
Development use only

# CICS TS remote development feature for Java

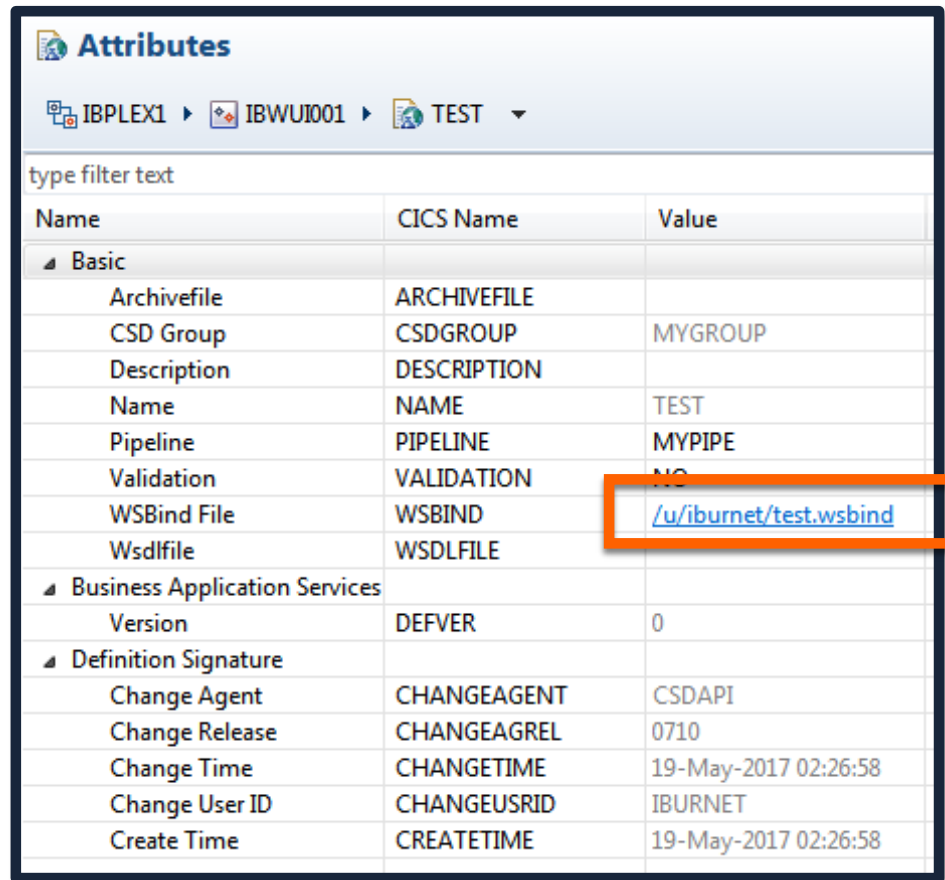


# Simplified CICS bundle resource lifecycle

The management of the CICS bundle resource lifecycle is also simplified.

It is now easier and quicker to export, install, and remove all types of CICS bundles.

CICS definitions and installed resources now also hyperlink to zFS Unix File System paths.

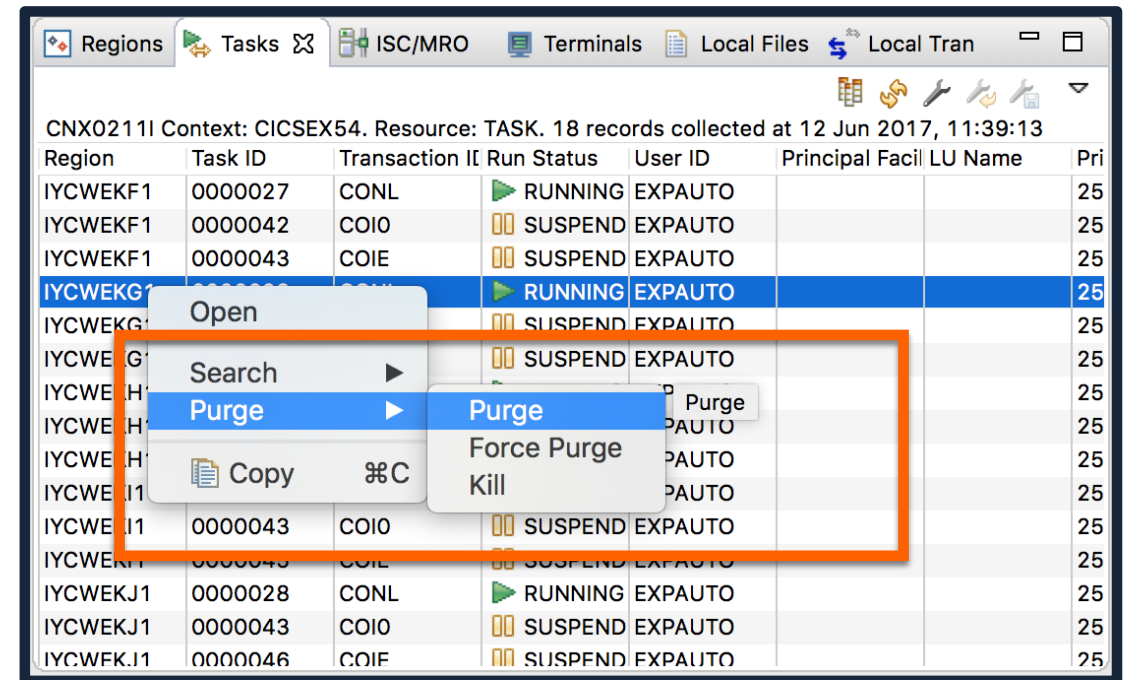


| Name                          | CICS Name   | Value                                                       |
|-------------------------------|-------------|-------------------------------------------------------------|
| type filter text              |             |                                                             |
| Basic                         |             |                                                             |
| Archivefile                   | ARCHIVEFILE |                                                             |
| CSD Group                     | CSDGROUP    | MYGROUP                                                     |
| Description                   | DESCRIPTION |                                                             |
| Name                          | NAME        | TEST                                                        |
| Pipeline                      | PIPELINE    | MYPIPE                                                      |
| Validation                    | VALIDATION  | NO                                                          |
| WSBind File                   | WSBIND      | <a href="/u/iburnet/test.wsbind">/u/iburnet/test.wsbind</a> |
| Wsdfile                       | WSDLFILE    |                                                             |
| Business Application Services |             |                                                             |
| Version                       | DEFVER      | 0                                                           |
| Definition Signature          |             |                                                             |
| Change Agent                  | CHANGEAGENT | CSDAPI                                                      |
| Change Release                | CHANGEAGREL | 0710                                                        |
| Change Time                   | CHANGETIME  | 19-May-2017 02:26:58                                        |
| Change User ID                | CHANGEUSRID | IBURNET                                                     |
| Create Time                   | CREATETIME  | 19-May-2017 02:26:58                                        |

# Improved ability to purge tasks running in a JVM server

The operations experience is also enhanced by using the improved management of JVM servers and associated CICS tasks.

CICS is now better able to remove disruptive tasks from the JVM server using the purge option, and can now remove associated threads and tasks in a more orderly sequence when disabling the JVMSERVER.



# zIIP offload improvement

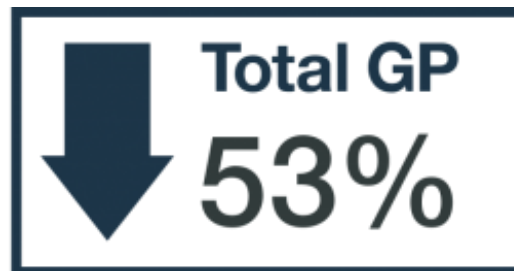
Allows a Liberty HTTP request to attach the CICS task on a T8 (Java) TCB

- Exploits Liberty thread pooling

- Reduces TCB switching

Also available on CICS TS V5.3

APAR PI54263



[www.developer.ibm.com/cics/2016/05/17/improving-ziip-eligibility/](http://www.developer.ibm.com/cics/2016/05/17/improving-ziip-eligibility/)



# CICS TS for z/OS Performance Report

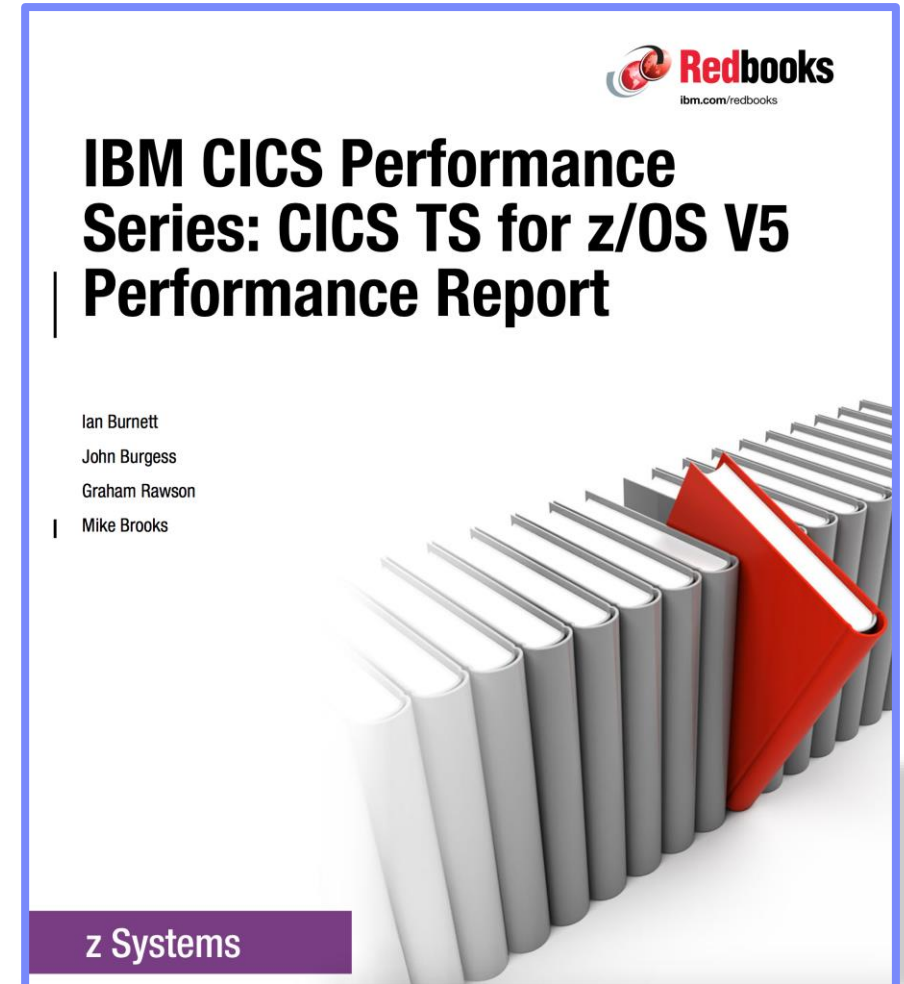
New draft version now available with V5.4 performance data.

- Release to release comparisons

Includes studies of:

- CICS tasks for Liberty Applications
- Asynchronous API
- EXCI support for channels and containers

[www.redbooks.ibm.com/abstracts/sg248298.html](http://www.redbooks.ibm.com/abstracts/sg248298.html)



# IBM SDK for Java 7.0 and 7.1 End of Service

[Withdrawal Announcement 916-121 – August 2, 2016](#)

To be withdrawn from service on September 30, 2019:

- IBM 64-bit SDK for z/OS, Java Technology Edition V7.0.0 and V7.1.0

[WebSphere Application Server Liberty base – Removal Notices](#)

Liberty fix pack 19.0.0.3:

- In this fix pack, the Liberty kernel will be recompiled and can no longer run with Java SE 7.

Blog post “[Java 8 recommended for CICS TS V5](#)”

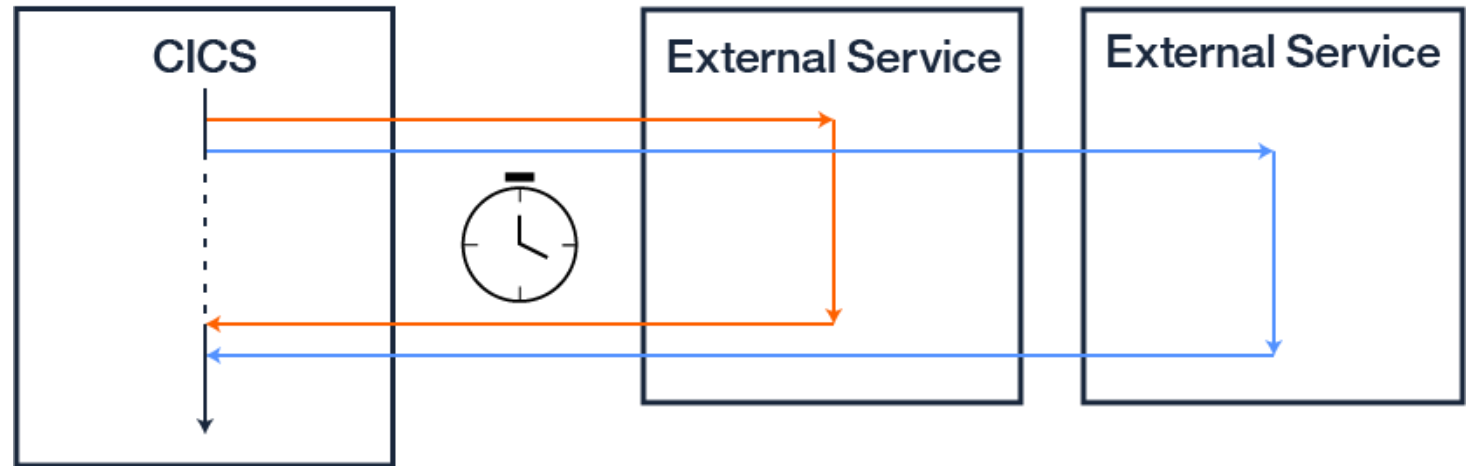
# CICS asynchronous API

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# CICS asynchronous API

A new asynchronous CICS API enables developers to incorporate programming logic that follows the 'parent-child' logic model in their CICS applications.

This allows application processes to run in parallel, enabling developers to create more responsive applications that are designed to minimize response times.



# CICS asynchronous API

The new asynchronous CICS API is supported across different programming languages using a simple set of functions:

- RUN TRANSID
- FETCH CHILD
- FETCH ANY
- FREE CHILD

Applications that utilize this new API benefit from the comprehensive statistics, monitoring and transaction tracking capabilities.

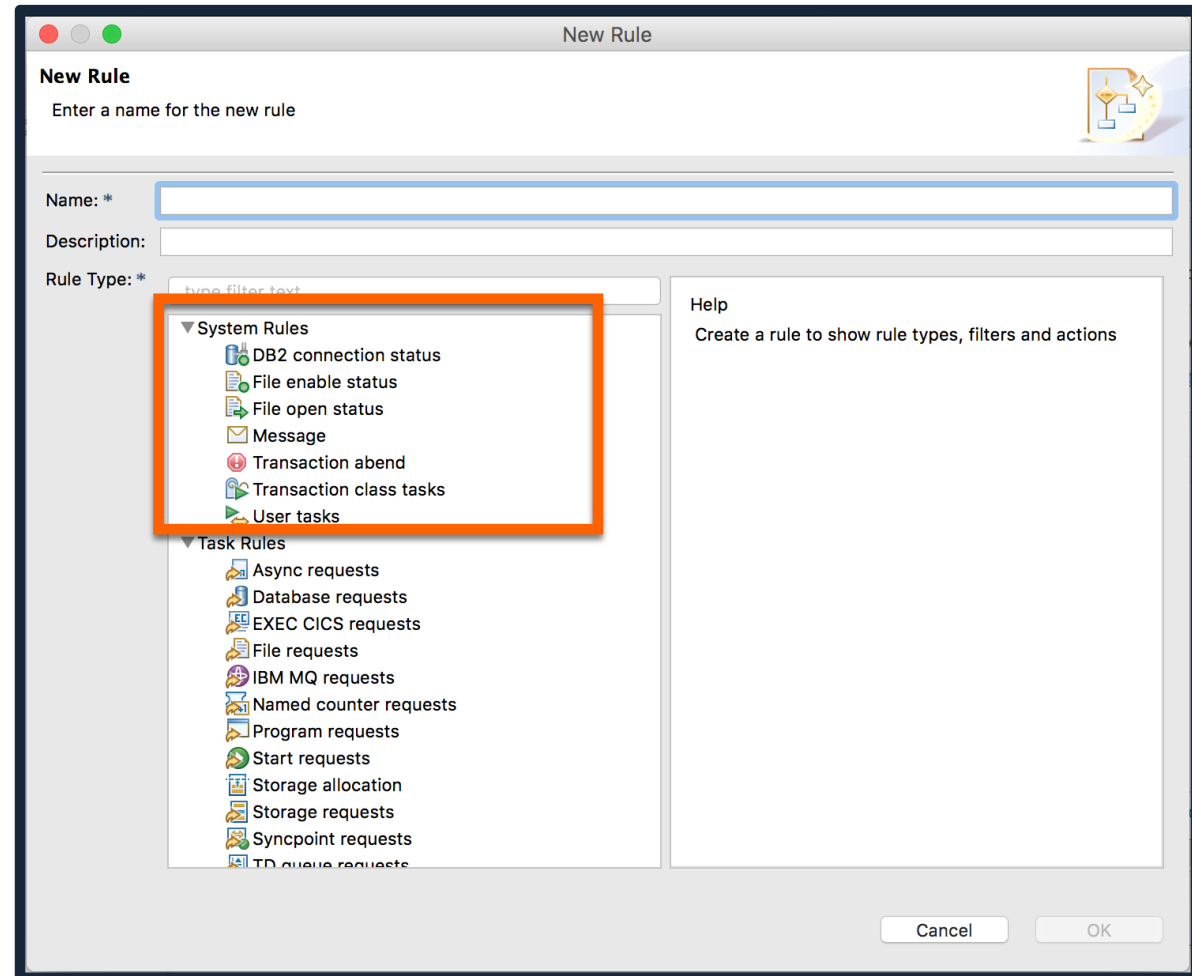
# CICS policies – system and task rules enhancements

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# CICS policies now include system rules

Policies are now expanded to support a new set of system-based rules.

This simplifies CICS systems management by providing a single place to create and manage both task-based and system-based policy rules.



# CICS policies – additional enhancements and simplification

Policies now provide the same capabilities as CICS system events and with a number of additional advantages. These include:

- ✓ combining multiple rules in a single policy
- ✓ writing a message to the CICS log in addition to emitting an event
- ✓ removing the requirement to define a capture specification for each event

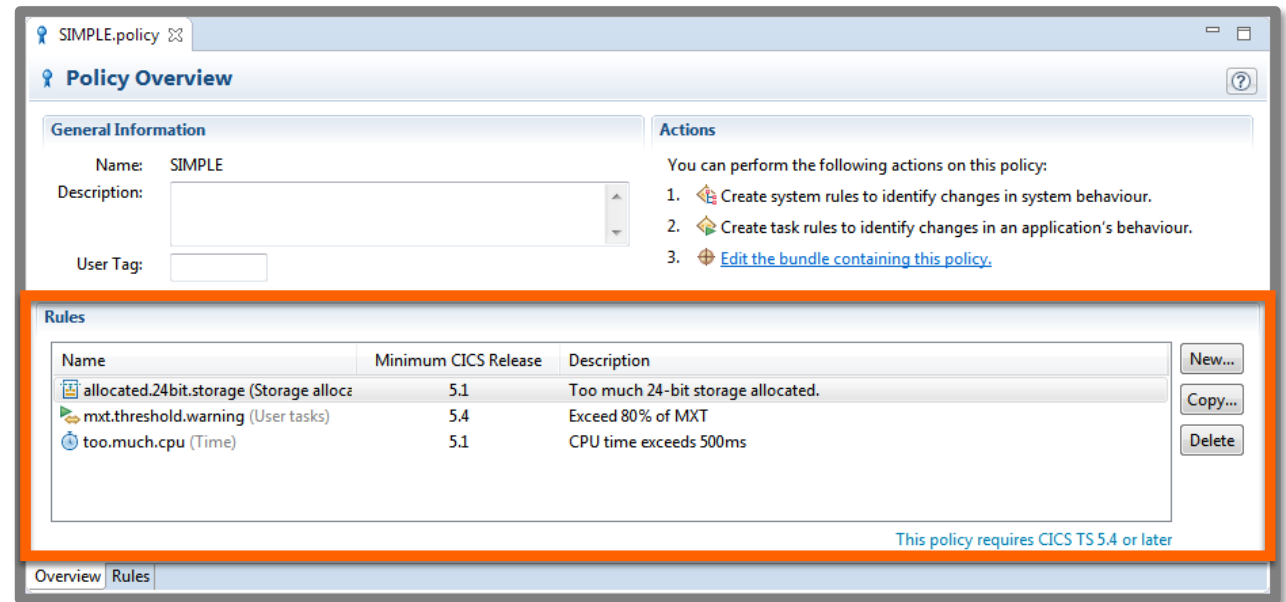
The screenshot displays the 'FilesPolicy.policy' configuration window. On the left, a 'Rules' list contains 'File\_Open (File open status)' and 'File\_Reads (File requests)', with the latter highlighted by an orange box. The main area is divided into three sections: 'General Information', 'Condition', and 'Action'. The 'General Information' section shows the rule type as 'File requests' and a description of the threshold-based trigger. The 'Condition' section specifies that the rule triggers when 'READ commands' are 'greater than' 100 'requests'. The 'Action' section, also highlighted by an orange box, shows the option to 'Issue a message' when the threshold is exceeded. A note at the bottom right states 'This rule requires CICS TS 5.1 or later'.



# New policy rules editor in CICS Explorer

A new policy rules editor in the CICS Explorer replaces the more limited functionality provided by the previous policy definition wizard. Additional capabilities include:

- ✓ editing existing policies
- ✓ defining multiple rules in a single policy
- ✓ specifying a user-defined abend code for the abend action on task rules



# CICS policy system rules replace CICS system events

- CICS system events are now deprecated and may be removed in a future release of CICS.
- CICS policies are the strategic replacement for the CICS system events technology.
- All events emitted by policy make use of the existing CICS events infrastructure.
- The underlying CICS events infrastructure and CICS application events remain strategic.
- APAR PI83667 provides support for Policy system rules for all CICS TS V5 releases.

# Security and resiliency enhancements

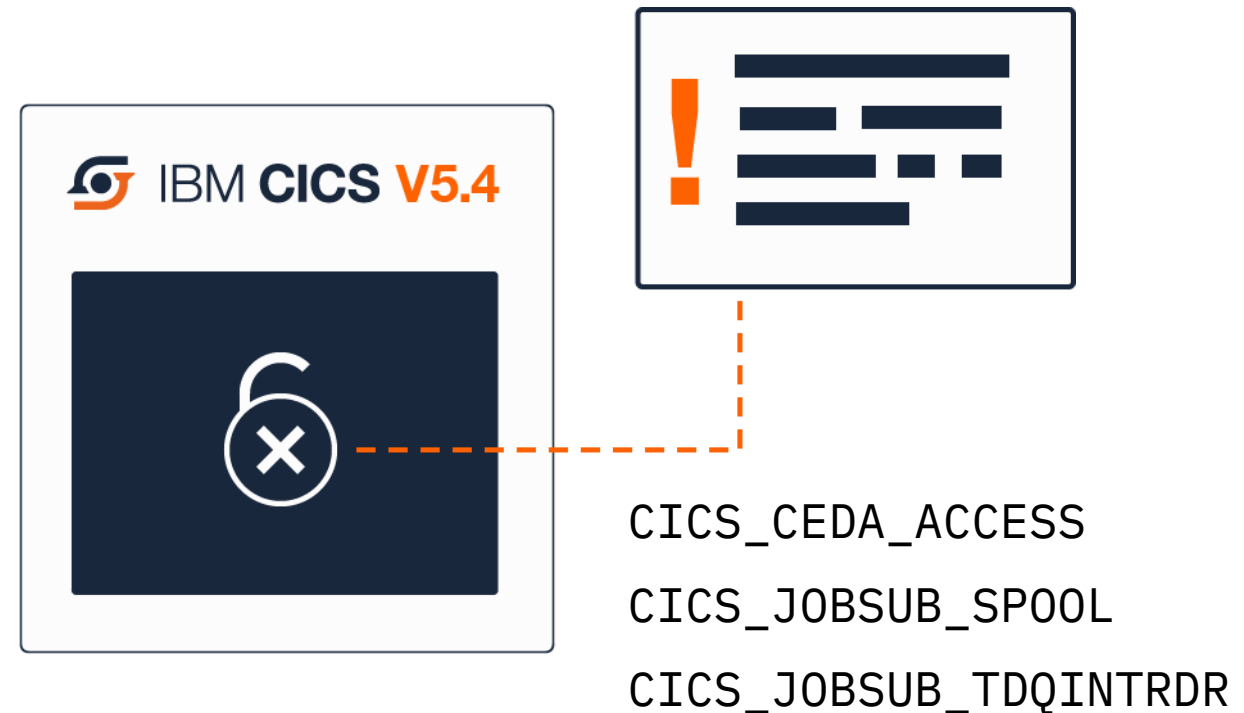
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# CICS TS implements three security-related IBM Health Checker for z/OS checks

CICS TS now supports three new IBM Health Checker for z/OS checks, each of which define security best practices.

If a CICS region becomes non-compliant, a Health Checker exception message will be issued.

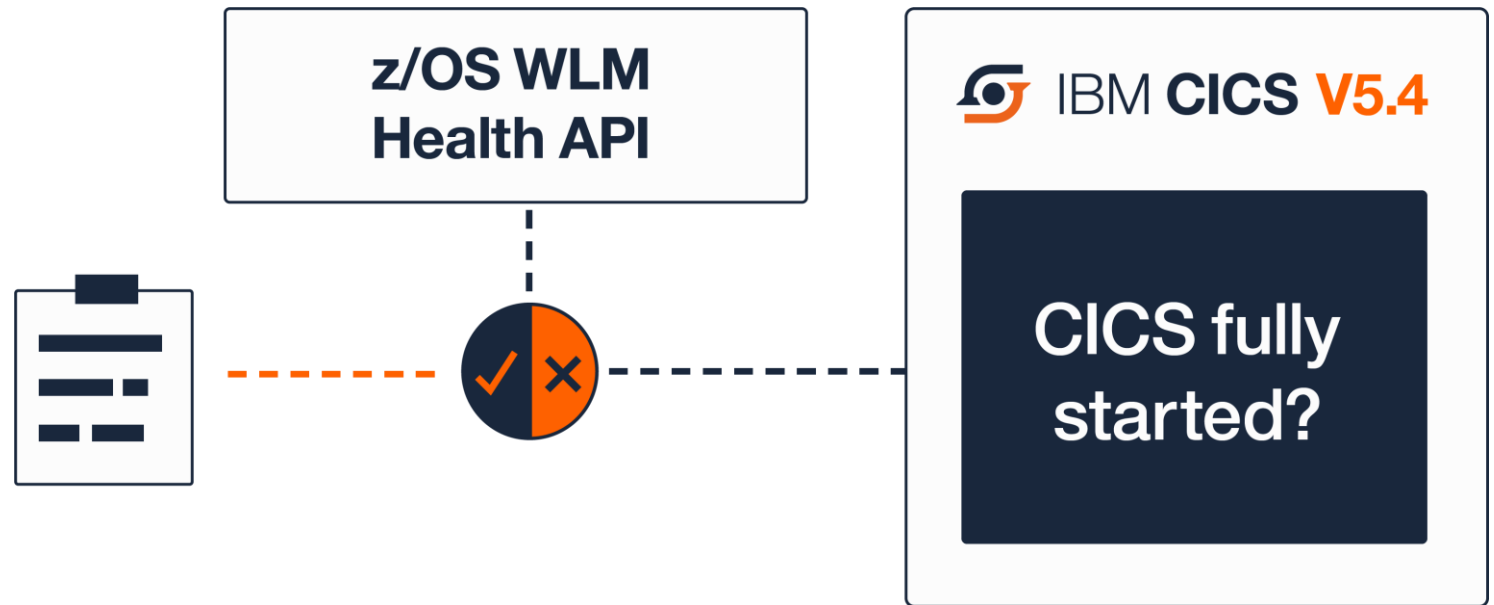
This support available in prior releases via APAR PI76965 and APAR PI76963



# Support for Workload Manager Health API

CICS TS can now utilize the z/OS Workload Manager Health API as a means of controlling the flow of work into a CICS region.

This can allow a CICS region to have a warm-up process after system initialization, to help to ensure that the CICS region is ready to receive work.



# Support for Workload Manager Health API

SIT parameter

WLMHEALTH=OFF

WLMHEALTH=20,25

Interval = 20 seconds  
Increment = 25%

SPI Command

EXEC CICS SET WLMHEALTH  
OPENSTATUS() INTERVAL()  
ADJUSTMENT()

20 s = 25%  
40 s = 50%  
60 s = 75%  
80 s = 100%

Allows regions to be open/closed  
for listening

# Workload Manager Health API exploiters

## TCP/IP Sysplex Distributor & port sharing

- Avoids new TCP/IP connections being sent to CICS regions that are not ready

- Works with all TCP/IP listeners, CICS Web support, EZA sockets, Liberty ...

- Allows JVM servers and web service pipelines to fully initialize

- Shutdown of TCP/IP services now sends HTTP close headers

## MQ adapter

- Prevents trigger message floods at startup

## CICSplex SM WLM

- WLM dynamic routing will avoid AORs with WLMHEALTH = 0

# CICSplex SM MAS internal tasks run as CICS system transactions

CICSplex SM MAS internal tasks now run as CICS system transactions and are implemented under the standard CICS CAT1 security category.

Additionally, this improves CICS TS resiliency by avoiding the possibility that a user could inadvertently purge critical system management tasks.

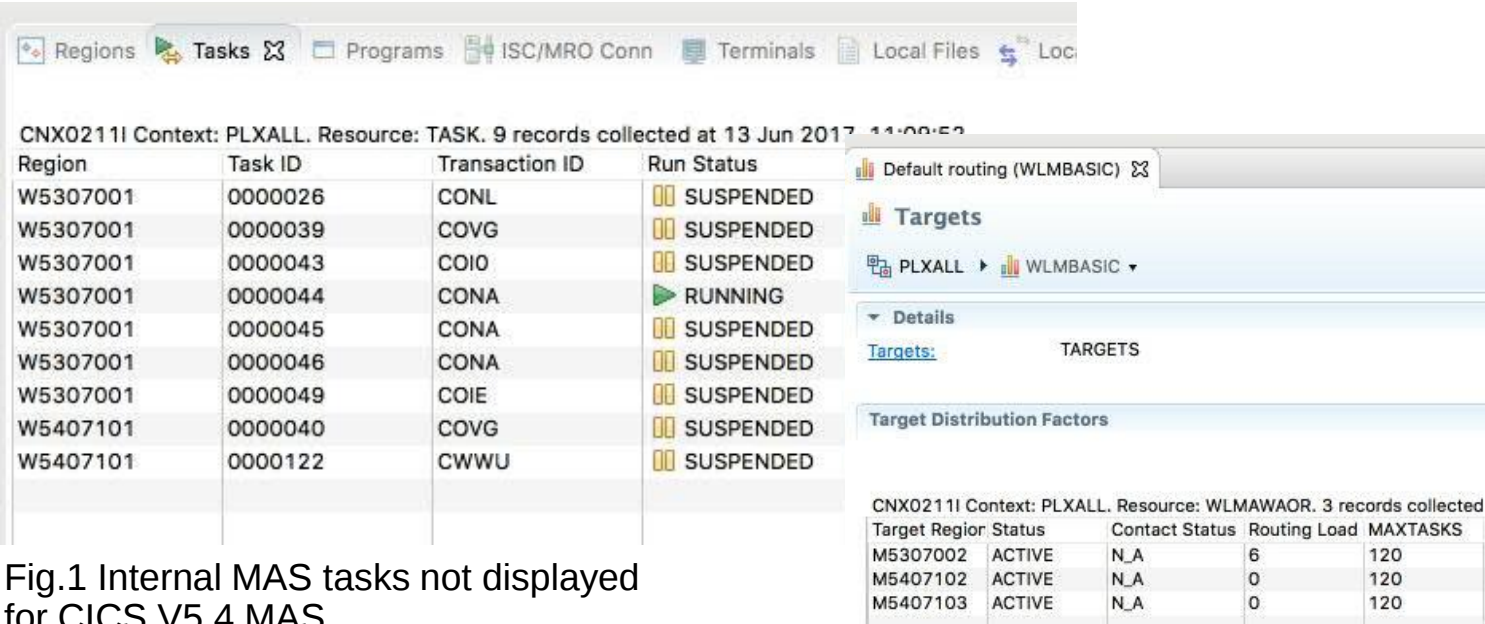


Fig.1 Internal MAS tasks not displayed for CICS V5.4 MAS

Fig.2 For WLM V5.3 AOR has routing bias of 6 by default, V5.4 has 0.

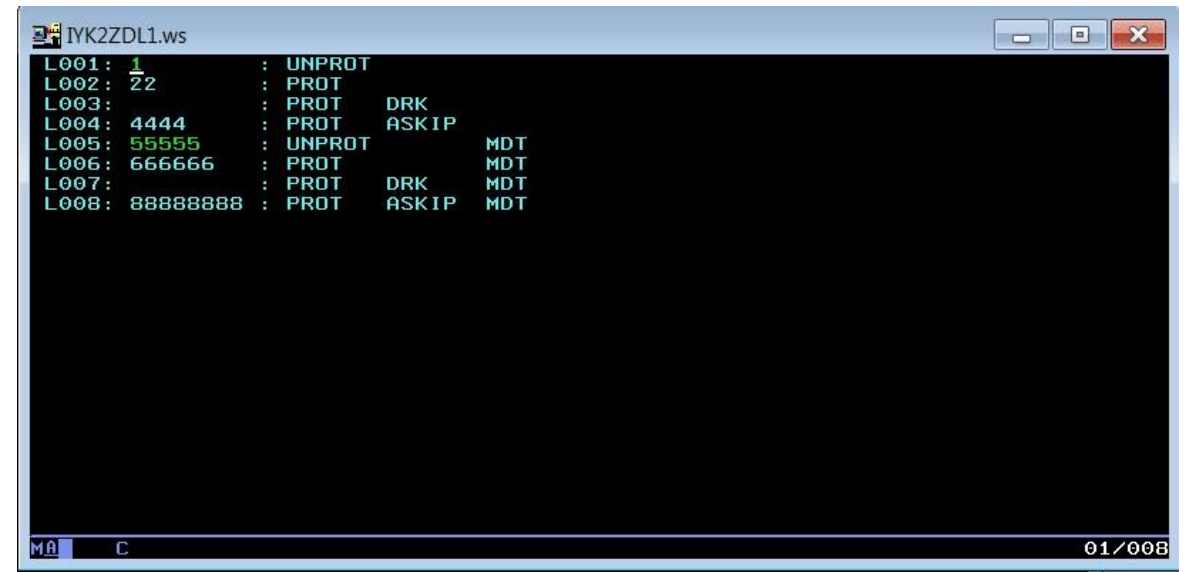


# CICS 3270 Intrusion Detection Service

Detects if a 3270 terminal emulator invalidly modifies a protected field.

The CICS 3270 Intrusion Detection Service (IDS) can help alert you to 3270 protocol violations as they occur in CICS Basic Mapping Support (BMS) applications.

CICS TS also integrates with the new z/OS Communication Server IDS function to identify potential protocol violations in real time, for both BMS and native 3270 data streams.



The screenshot shows a terminal window titled 'IYK2ZDL1.ws'. It displays a list of data fields (L001 through L008) and their protection status. The fields are listed in a table-like format with columns for field name, value, and protection status. The status is indicated by a colon followed by the status name. Some fields have additional status indicators to the right.

| Field | Value    | Status | Additional |
|-------|----------|--------|------------|
| L001  | 1        | UNPROT |            |
| L002  | 22       | PROT   |            |
| L003  |          | PROT   | DRK        |
| L004  | 4444     | PROT   | ASKIP      |
| L005  | 55555    | UNPROT | MDT        |
| L006  | 666666   | PROT   | MDT        |
| L007  |          | PROT   | DRK MDT    |
| L008  | 88888888 | PROT   | ASKIP MDT  |

The terminal window has a status bar at the bottom showing 'MA C' and '01/008'.

# Read-only versions of CEDF and CEDX

New CICS transactions CEDG and CEDY are introduced, which examine application programs safely when debugging in a production environment, without the risk of inadvertently overwriting sensitive in-memory storage.

```
EDF IS READONLY - CHANGES TO STORAGE WILL BE IGNORED
ENTER:  CURRENT DISPLAY
PF1 : UNDEFINED      PF2 : BROWSE TEMP STORAGE PF3 : UNDEFINED
PF4 : EIB DISPLAY     PF5 : INVOKE CECI          PF6 : USER DISPLAY
PF7 : SCROLL BACK HALF PF8 : SCROLL FORWARD HALF PF9 : UNDEFINED
PF10: SCROLL BACK FULL PF11: SCROLL FORWARD FULL PF12: REMEMBER DISPLAY
```

**CEDG = R/O CEDF**

**CEDY = R/O CEDX**

# Additional security infrastructure enhancements

Additional security infrastructure enhancements:

- ✓ CICS TS now supports mutual authentication for Kerberos so that a client who uses Kerberos can verify the identity of the CICS TS server.
- ✓ The default CICS start-up configuration has been changed such that only CICS regions defined to RACF will be allowed to generate RACF passtickets.
- ✓ Daily logging of userids that only use web access is now mandatory and the performance of this logging is improved.
- ✓ Pre-set userid terminals that do not have terminal specific security can now be configured to share System Authorization Facility (SAF) security registration.

# EXCI support for channels and containers

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# New EXEC CICS commands for batch programs

The EXCI interface enables standalone applications that run on z/OS to programmatically interoperate with CICS-hosted applications and APIs.

This interface is now enhanced to add support for CICS channels and containers. It provides a mechanism to exchange large volumes of structured parameter data between batch applications and CICS applications.



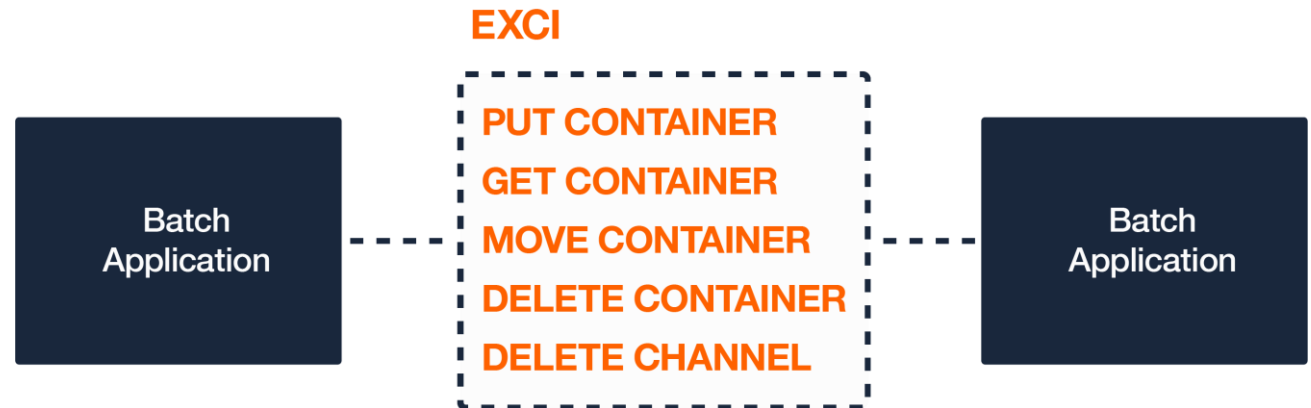
# Target program can be in a CICS region running an older release of CICS

Any CICS applications coded to the channel and containers API and invoked using Distributed Program Link (DPL) can also be invoked unchanged from an EXCI client, including CICS applications that run on earlier CICS TS releases that support channels and containers.

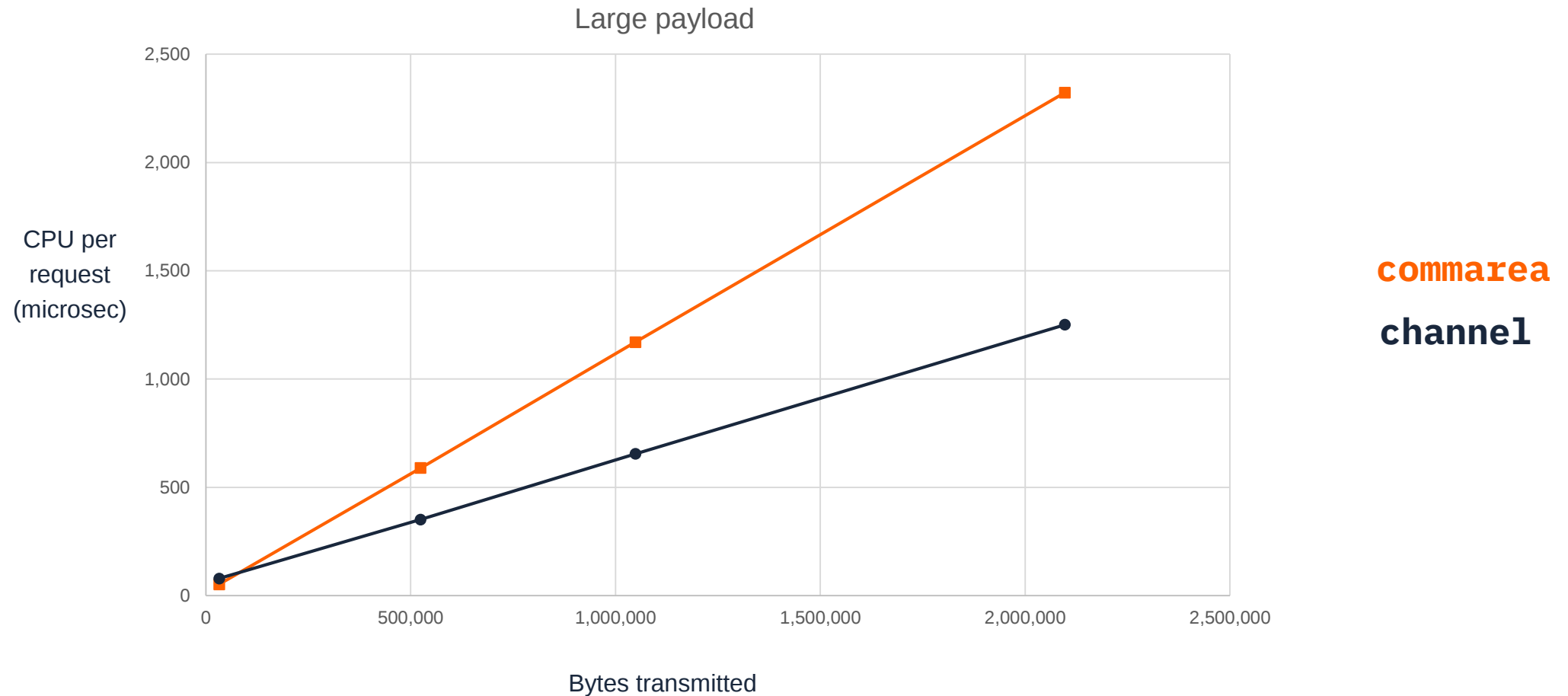


# This new API can be used totally outside of CICS

This new API can also be used as a way to pass data between programs that run outside CICS, such as programs that make up a batch application, even if the application does not communicate with CICS.



# For large payloads, channel uses less cpu than commarea





# New mechanism for controlling MQ trigger and bridge monitors

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# MQMONITOR – a new RDO resource

CICS system administration of applications that utilize MQ is simplified.

A new resource definition online (RDO) defined resource MQMONITOR provides control over the transaction ID and user ID under which a monitor task runs.

CICS can now automatically start and stop MQ monitor tasks, which are based on the status of the MQCONN resource.

```
OVERTYPE TO MODIFY
CEDA  ALter MQMonitor( MON1      )
MQMonitor      : MON1
Group          : MYGROUP
DEscription    ==> _
Status         ==> Enabled
MONITOR ATTRIBUTES
Autostart      ==> Yes
MONData        ==>
(Mixed Case)   ==>
               ==>
               ==>
MONUserid      ==> USER123
Qname          ==> YOUR.QUEUE.NAME
Transaction    ==> CKTI
APPLICATION ATTRIBUTES
Userid         ==> USER456
```

# MQMONITOR

Can be used to control an MQ bridge / trigger or user written monitor

Configure the transaction ID, User ID that the monitor runs under.

AUTOSTART starts the monitor as the MQCONN resource is enabled

Integration with WLM health to avoid a CICS region being flooded

```
OVERTYPE TO MODIFY
CEDA  ALter MQMonitor( MON1      )
      MQMonitor      : MON1
      Group          : MYGROUP
      DEScription    ==> _
      Status         ==> Enabled
MONITOR ATTRIBUTES
      Autostart      ==> Yes
      MONData        ==>
      (Mixed Case)   ==>
                      ==>
                      ==>
      MONUserid      ==> USER123
      Qname          ==> YOUR. QUEUE. NAME
      Transaction    ==> CKTI
APPLICATION ATTRIBUTES
      Userid         ==> USER456
```

# MQMONITOR interaction with WLM Health

- If WLM health is enabled
  - CICS postpones starting of MQMONITORs until WLMHEALTH > 0%
  - If WLM health percentage is < 100 % message GET rate is limited
  - When WLMHEALTH drops to 0%, all MQMONITORs are stopped

DFHMQ0370 MQMONITORs are currently restricted to nnn MQGETs per second

# Improvements for Java applications accessing MQ servers

In addition, the MQ resource adapter can be configured as a JMS provider in the CICS Liberty JVM server. MQ servers on any platform are now supported as a JMS provider.

When using MQ on z/OS on the same LPAR, cross-memory bindings can be used to optimize performance.

Java Applications that use the MQ Classes for Java or the MQ Classes for JMS in the OSGi JVM server to access MQ for z/OS, can gain a performance benefit from reduced TCB switching.



# Enhancements that simplify or automate common workflows

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# IBM z/OS Provisioning Toolkit

The IBM z/OS Provisioning Toolkit is a simple command line utility for the rapid provisioning of z/OS development environments.

System programmers can easily manage the provisioning process by preconfiguring the environments using z/OSMF workflows.

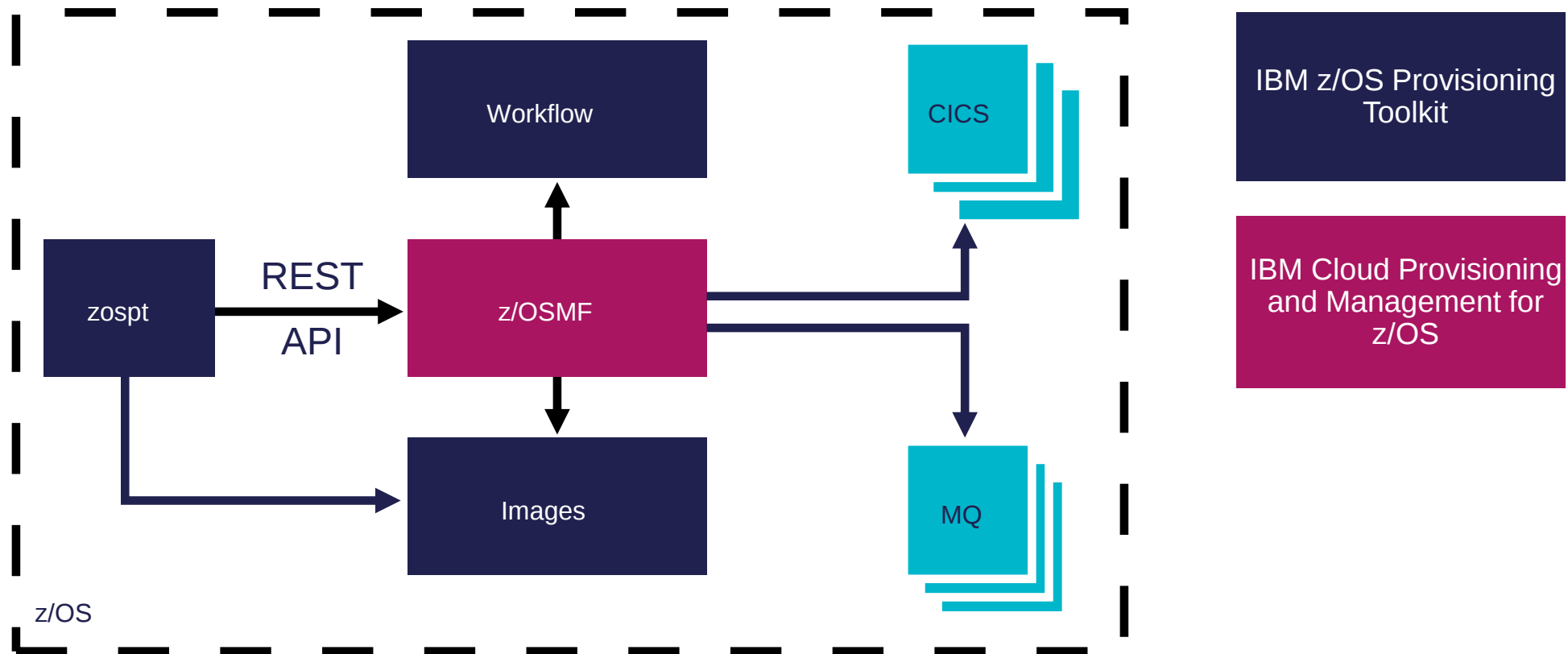
Application developers can provision and deprovision z/OS applications environments in minutes, without requiring any z/OS specific administration skills.

Uses IBM Cloud Provisioning and Management for z/OS to control developer access and set appropriate provisioning limits.

The toolkit is fully supported and available now to all z/OS V2 clients at no additional charge.



# IBM z/OS Provisioning Toolkit

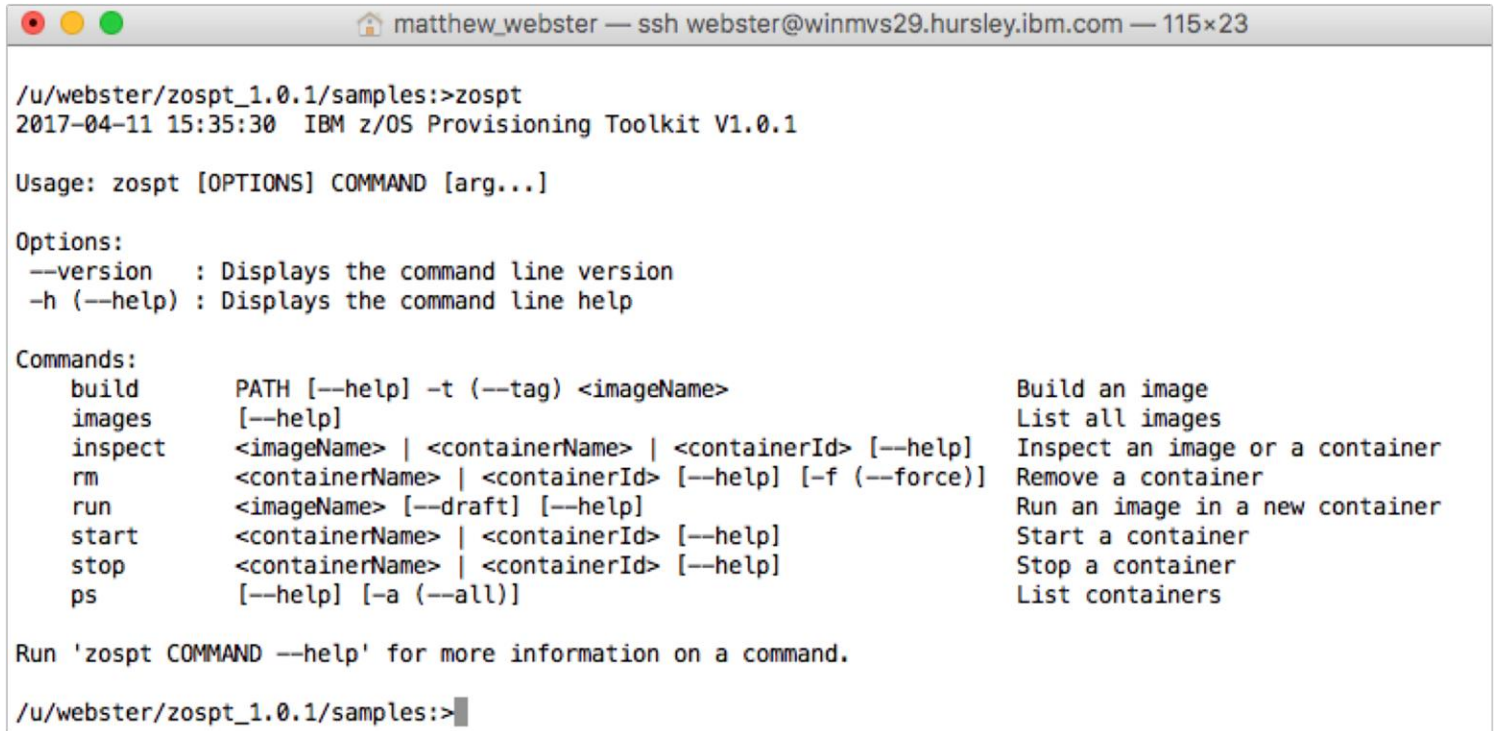




# IBM z/OS Provisioning Toolkit

The toolkit provides a simple command line interface to drive the automatic provisioning process: run, start, stop, rm (remove).

Creating portable application images allows developers and testers to provision and run development environments in a single action, in minutes.



```
matthew_webster — ssh webster@winmvs29.hursley.ibm.com — 115x23

/u/webster/zospt_1.0.1/samples:>zosp
2017-04-11 15:35:30 IBM z/OS Provisioning Toolkit V1.0.1

Usage: zosp [OPTIONS] COMMAND [arg...]

Options:
  --version    : Displays the command line version
  -h (--help)  : Displays the command line help

Commands:
  build      PATH [--help] -t (--tag) <imageName>      Build an image
  images     [--help]                                  List all images
  inspect    <imageName> | <containerName> | <containerId> [--help]  Inspect an image or a container
  rm         <containerName> | <containerId> [--help] [-f (--force)]  Remove a container
  run        <imageName> [--draft] [--help]              Run an image in a new container
  start      <containerName> | <containerId> [--help]    Start a container
  stop       <containerName> | <containerId> [--help]    Stop a container
  ps         [--help] [-a (--all)]                      List containers

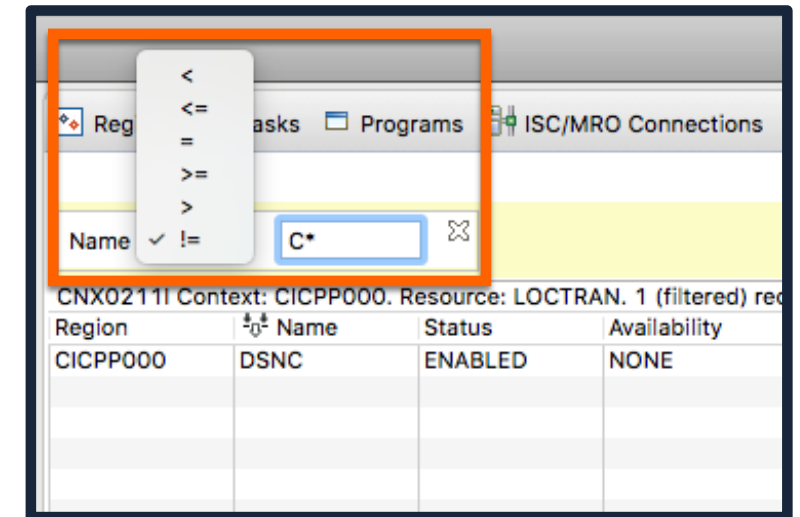
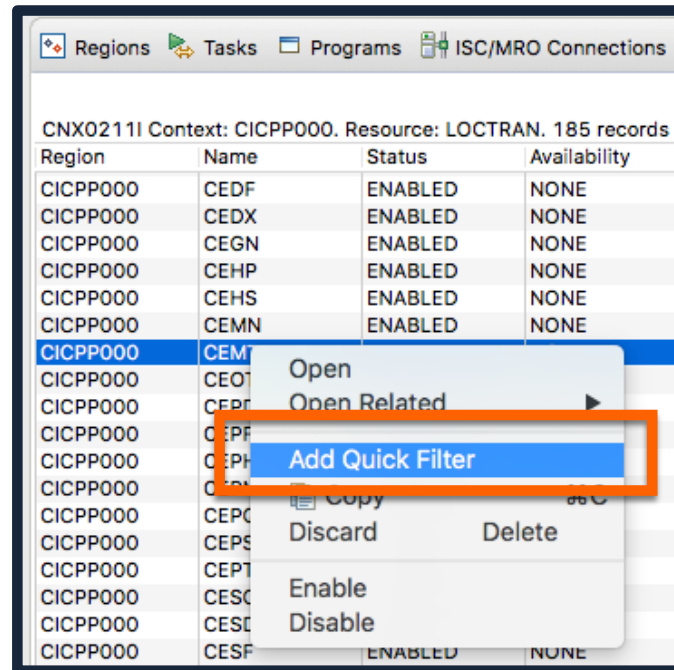
Run 'zosp COMMAND --help' for more information on a command.

/u/webster/zospt_1.0.1/samples:>
```

# CICS Explorer quick filter enhancements

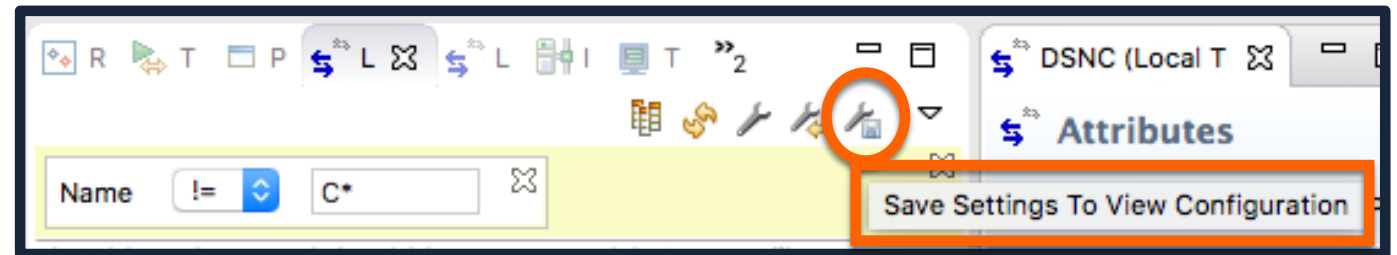
The quick filter capability of CICS Explorer is redesigned to easily create additional views that focus on specific information.

Quick filters can be added to existing views and a full set of equality operators are now available.

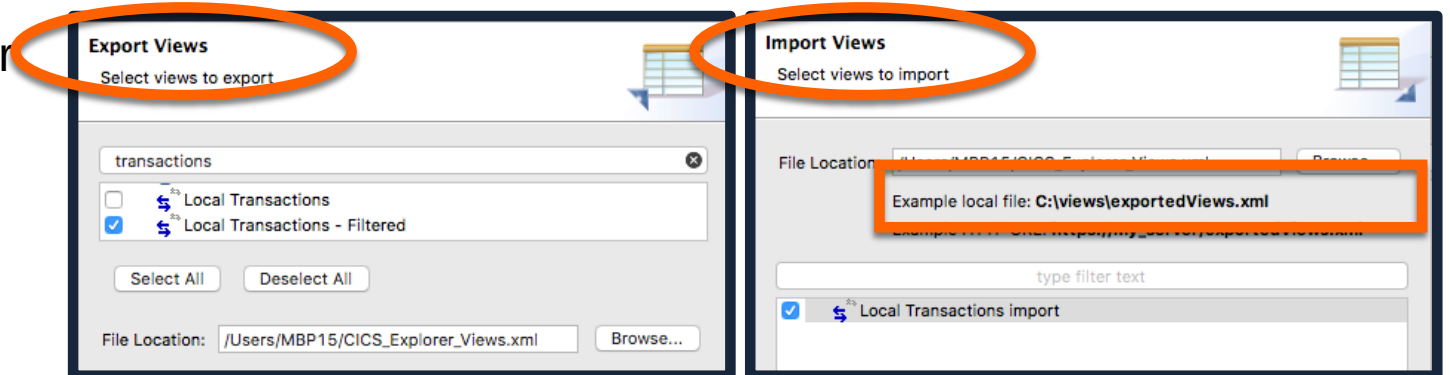


# Import and export of view configurations

Quick filters can also now be quickly saved to permanent view configurations to provide rapid access to frequently used information.



View configurations can be exported for sharing across teams and for back-up purposes, and can now be imported into CICS Explorer instances from a central web server.



# Support for new deployment tasks in DFHDPLOY

DFHDPLOY can now perform PIPELINE SCAN, PROGRAM NEWCOPY and PROGRAM PHASEIN operations.

This enables automation to be written to update these resources without requiring the direct use of the CICSplex SM API.

APAR PI72104 adds this capability to earlier CICS TS V5 releases.

```
*=====
*  Change the instance of an installed PROGRAM, in a CICS system or
*  group of CICS systems. Use this command with the PHASEIN option
*  to phase in a new version of a PROGRAM without disrupting active
*  tasks or NEWCOPY option to use a new copy of the PROGRAM when the
*  PROGRAM ceases to be in use by any transaction.
*
  SET PROGRAM(PROGRAM1)
    SCOPE(GROUP1)
    PHASEIN;
*
  SET PROGRAM(PROGRAM2)
    SCOPE(GROUP1)
    NEWCOPY;
*
*=====
*  Use this command with the SCAN option to initiate a scan
*  of the web service binding directory that is specified in the
*  WSDIR attribute of the PIPELINE.
*
  PERFORM PIPELINE(PIPENAME)
    SCOPE(GROUP1)
    SCAN;
*
*=====
```

# System autoinstall of program definitions for Language Environment

Upgrades are simplified because system auto install is now used to install program definitions for Language Environment (LE) as required. Only those programs that are used will have their definitions installed.

This drastically reduces the number of installed definitions and removes the need for LE definitions to be refreshed for each individual CICS region when z/OS is upgraded.

This capability is available with an APAR on CICS/TS 5.1, 5.2, and 5.3

```
/*              CICS APF-authorized libraries
//STEPLIB DD DSN=hlq.CICS.SDFHAUTH,DISP=SHR
//          DD DSN=hlq.LE.SCEERUN2,DISP=SHR
//          DD DSN=hlq.LE.SCEERUN,DISP=SHR
/*              CICS load libraries
//DFHRPL DD DSN=hlq.CICS.SDFHLOAD,DISP=SHR
//          DD DSN=hlq.LE.SCEECICS,DISP=SHR
//          DD DSN=hlq.LE.SCEERUN2,DISP=SHR
//          DD DSN=hlq.LE.SCEERUN,DISP=SHR
```

Use only these Language Environment runtime libraries for **all** your high-level language application programs

# New NOSUSPEND option on EXEC CICS named counter server commands

- Makes possible an immediate return to the application program during coupling facility structure rebuild.
- A new condition, BUSY with RESP2 500 means:
  - The NOSUSPEND option was specified on the command, and the coupling facility structure is not currently available during a rebuild.

# New NOSUSPEND option on EXEC CICS named counter server commands

- Applicable to the following EXEC CICS named counter server commands:
  - DEFINE COUNTER and DEFINE DCOUNTER
  - DELETE COUNTER and DELETE DCOUNTER
  - GET COUNTER and GET DCOUNTER
  - QUERY COUNTER and QUERY DCOUNTER
  - REWIND COUNTER and REWIND DCOUNTER
  - UPDATE COUNTER and UPDATE DCOUNTER

# Non-Java support for JSON web services

- JSON messages can now be processed in CICS regions with no Java configuration.
- You don't have to configure and install a JVM server
- Performance and throughput for many workloads will be better than when using a JVM server to process JSON
- Implemented by using program DFHPIJT as the terminal handler of a provider pipeline



# New options to dump non-CICS address and data spaces

- New options, JOBLIST and DSPLIST, are added to the INQUIRE SYSDUMPCODE and SET SYSDUMPCODE commands
- These new options can be used to dump non-CICS address spaces and data spaces when a CICS dump is triggered

```
I SYD
RESULT - OVERTYPE TO MODIFY
Sydumpcode(LG0772)
Sysdumping( Sysdump )
Dumpscope( Local )
Shutoption( Noshutdown )
Maximum( 999 )
Current(0000)
Action(          )
Daeoption( Nodae )
Joblist( IXGLOGR,XCFAS                      )
Joblist(                                     )
Joblist(                                     )
Dsplist( SYSLOGR0,SYSIXG*,IXCA*,IXCD*,IXLCBCAD,IXLCTCAD )
Dsplist(                                     )
Dsplist(                                     )
Dsplist(                                     )
Dsplist(                                     )
```

SYSID=NXS APPLID=IYNXS  
TIME: 19.02.12 DATE: 01/05/18

PF 1 HELP 2 HEX 3 END            5 VAR            7 SBH 8 SFH            10 SB 11 SF

# **Resources for getting started with CICS**

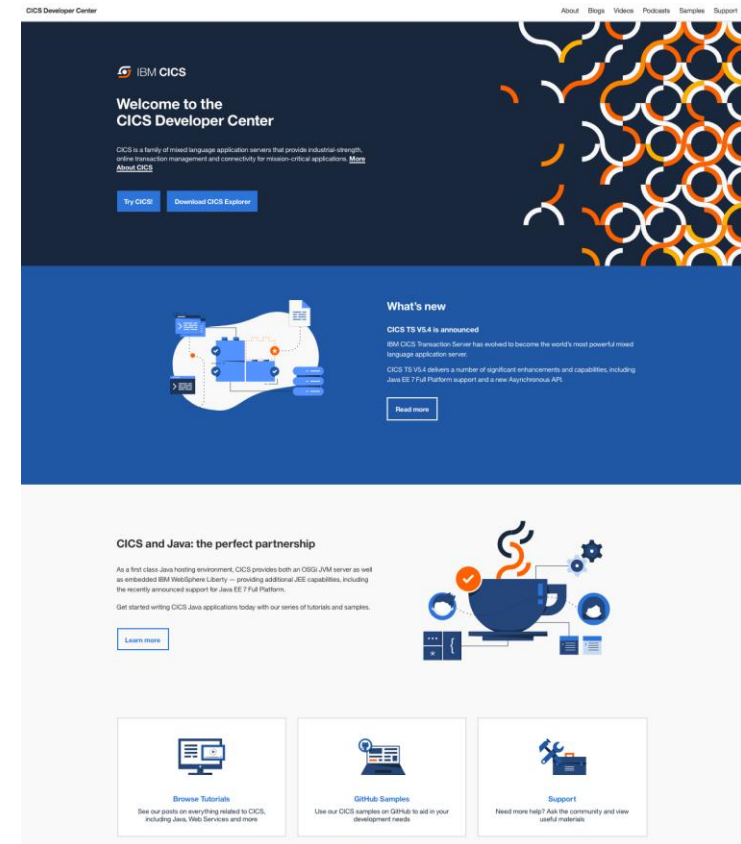
# CICS Developer Center

Continuous Delivery of CICS TS also requires  
Continuous Delivery of education

The CICS Developer Center has a number of resources  
to help users make the most of CICS :

- Blogs – around 120 technical articles to date
- Samples – hosted on GitHub
- Support – Q&A forums
- Podcasts, videos, client success stories & more

[developer.ibm.com/cics](https://developer.ibm.com/cics)



# Introduction to CICS



IBM CICS

## Video course series from IBM Redbooks

- Introduction to CICS
- Developing a RESTful Web application for Liberty in CICS
- Architecting Java solutions for CICS
- Extending a CICS web application using JCICS

### Course introduction

- ▶ Services provided by CICS
- ▶ How CICS applications are defined
- ▶ Scaling CICS to meet demand



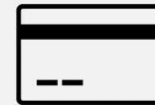
### Why use CICS?

Mission critical applications

- ▶ Downtime measured in \$100,000+



Stock trading



Credit cards



<https://ibm.biz/cics-java-courses>

# Getting Started with Java in CICS



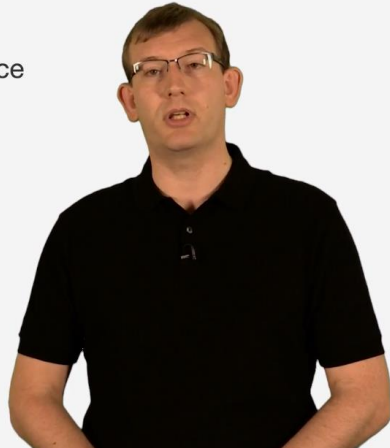
IBM CICS

## Video course series from IBM Redbooks

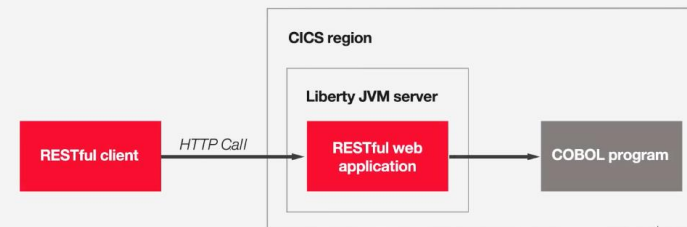
- Introduction to CICS
- Developing a RESTful Web application for Liberty in CICS
- Architecting Java solutions for CICS
- Extending a CICS web application using JCICS

### What you'll learn by the end of this course

1. Developing a RESTful Java web service
2. Using the CICS Java API
3. Deployment of web applications



### What you'll see in this course



[ibm.biz/cics-java-courses](http://ibm.biz/cics-java-courses)

# CICS Performance Series

A series of educational videos covering the key topics and considerations for understanding CICS performance.

Including:

- Making sense of MIPs, MSUs and SUs
- LPAR capping
- CICS & z/OS WLM

These videos and our our IBM Redbooks publications can be found on one page in the Developer Center, here:

<https://developer.ibm.com/cics/cics-performance-resources/>





# CICS resources

## CICS TS V5.4 Overview

- All you need to know e-book: [ibm.biz/cics54book](https://ibm.biz/cics54book)
- Webcast: [ibm.biz/cics-54-replay](https://ibm.biz/cics-54-replay)

## CICS Developer Center: [ibm.biz/cicsdev](https://ibm.biz/cicsdev)

- Tutorials, samples on GitHub, client success stories
- Performance Series: [ibm.biz/cics-performance](https://ibm.biz/cics-performance)

## IBM Redbooks Video Courses: [ibm.biz/cics-video-courses](https://ibm.biz/cics-video-courses)

- NEW Introduction to CICS
- 3 CICS Java courses

## CICS Social Channels

- Facebook: [/IBMCICS](https://www.facebook.com/IBMCICS)
- Twitter: [@IBM\\_CICS](https://twitter.com/IBM_CICS)
- Youtube: [ibm.biz/cicsvideos](https://ibm.biz/cicsvideos)
- CICSbuzz monthly email newsletter: [ibm.biz/cicsbuzz-subscribe](https://ibm.biz/cicsbuzz-subscribe)

# IBM Z Trial Program

Experience the value of the latest IBM Z capabilities today at no charge, and with no install required.

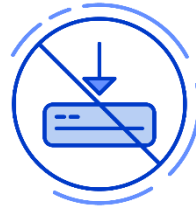


[ibm.biz/ibmztrial](https://ibm.biz/ibmztrial)



## No charge, on-demand environment

With no lead times, and access to a no charge remote environment. Trying out IBM Z capabilities is now easier than ever.



## No setup, no install

We provision an environment for you. With all the tooling and connections pre-configured, start trying out the latest IBM Z has to offer in minutes, not hours.



## Hands-on tutorials

Experience the latest products and features on the mainframe, with short, step-by-step walkthroughs built in to your trial environment.



## Available trials

- ▶ **z/OS Connect Enterprise Edition**
- ▶ **Apache Spark on z/OS**
- ▶ **Application Discovery and Delivery Intelligence**
- ▶ **Information Management Systems (IMS)**
- ▶ **Db2 Administration Solution for z/OS**

## Coming soon

- **Db2 Utilities Solution for z/OS**
- **CICS Transaction Server**
- **IBM OMEGAMON for JVM on z/OS**
- **IBM Cloud Provisioning and Management for z/OS**



IBM Software Group

# What's new in CICS TS V5.4

***Dan Zachary***

***CICS Level 2 support***

***danz@us.ibm.com***



@business on demand.